

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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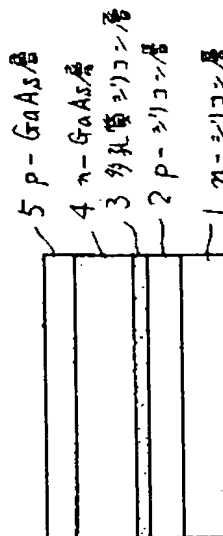
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APPLICATION NUMBER : 02031204

APPLICANT : SUMITOMO ELECTRIC IND LTD;

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TITLE : MANUFACTURE OF TANDEM TYPE  
SOLAR BATTERY



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ABSTRACT : PURPOSE: To enable a solar battery of III-V group semiconductor developing less lattice defects on a silicon substrate to be formed for increasing the photoelectric conversion efficiency by making the surface of the silicon substrate porous for a silicon solar battery.

CONSTITUTION: A single crystal silicon solar battery is composed of an n-silicon layer 1 and a p-silicon layer 2. Next, the substrate surface of said solar battery is anodized in fluoric acid solution making the surface porous to form a porous silicon layer 3. Next, an n-GaAs layer 4 and a p-GaAs layer 5 are formed on the layer 3 to manufacture the title tandem type solar battery. The photoelectric conversion efficiency of this solar battery is measured to be 27% so that the higher conversion efficiency than that of 24% of the solar battery formed by conventional process may be attained. That is, a compound semiconductor subject to less transposition and residual stress can be grown by making the topmost surface of a silicon substrate porous thereby enabling a high performance solar battery to be manufactured.

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